



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,979	02/27/2004	Wolfgang Aderhold	008304	6862
60300 7590 04/01/2011 LAW OFFICES OF CHARLES GUENZER ATTN: APPLIED MATERIALS, INC. 2211 PARK BOULEVARD P.O. BOX 60729 PALO ALTO, CA 94306				
EXAMINER				
PAIK, SANG YEOP				
ART UNIT		PAPER NUMBER		
3742				
MAIL DATE		DELIVERY MODE		
04/01/2011		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/788,979

Applicant(s)

ADERHOLD ET AL.

Examiner

SANG Y. PAIK

Art Unit

3742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-9, 13-15 and 30-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-9, 13-15 and 30-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-940)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. In view of the amendment filed on 12/20/10, PROSECUTION IS HEREBY REOPENED. A new ground of rejection set forth below.
2. To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing the office action.

/TU B HOANG/

Supervisory Patent Examiner, Art Unit 3742

/KAREN M. YOUNG/

Director, Technology Center 3700

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5, 7-9, 13-15 and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moslehi (US 4,891,499) in view of Ballance et al (US 6,090,210) or Anderson et al (US 6,113,703).

Moslehi '499 shows the method and the apparatus claimed including a radiant heat source (24) for thermal processing of a substrate/wafer (28) with its front side/device side (28) face down in a reaction chamber (12) wherein the front side of the substrate is monitored by photo detectors (43 and 45) that measure temperatures at a plurality of radial positions relative to a center of the substrate as shown by the portions (39, 41) as shown in Figure 2). Moslehi '499 further shows an annular ring/shelf (46) with pins (56) having a slope for supporting and extending under the substrate around its center wherein the ring with the pins extends or overlaps no further than an edge of the front side of the substrate (also see Figures 2 and 3, and column 6, lines 57-61). But, Moslehi '499 does not explicitly show the pyrometrical monitoring.

Ballance shows a thermal processing apparatus with a radiant source, an annular ring (18) for holding a substrate wafer with an edge which extends or overlaps an edge of the substrate, a chamber (12) for holding the substrate therein, the chamber is further shown with a reflector (28) parallel to the substrate and a pyrometer (34) for measuring temperatures at a plurality of radial positions relative to the center of the substrate. Anderson also shows that it is well known in the art to provide a thermal processing apparatus for a substrate disposed in a chamber wherein the temperatures

of the substrate are measured by pyrometers (24, 22) that face both the front and back side of the substrate.

In view of Ballance or Anderson, it would have been obvious to one of ordinary skill in the art to adapt Moslehi '499 with pyrometers to measure the temperatures of the wafer substrate as an alternative means that can also effectively measure the temperature distributions along the plurality of positions of the substrate. Furthermore, as Ballance shows the reflector in the reactor chamber, it would have been obvious to one of ordinary skill in the art to further adapt Moslehi '499 with a reflector in the reactor (12) to allow more even heat distribution in the chamber for thermally processing and heating the substrate disposed therein.

With respect to claim 4, while the recited edge exclusion zone of no more than 3 mm is shown by Moslehi, it would have been obvious to one of ordinary skill in the art to limit such zone within the recited range or any other suitable range as a matter of a routine experimentation to provide the supporting holding means with only a minimum extension that would adequately and sufficiently support the substrate without much overlapping or blocking the thermal processing of the working surface of the substrate.

Response to Arguments

5. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

The Board of the Patent Appeals and Interferences has issued a decision on 6/28/201 reversing the examiner's position regarding claims 1-5, 7-9, 13-15 and 30-32

as failing to meet the burden requisite for a conclusion of obviousness. A new ground of rejection is set forth to meet the prima facie case of obviousness as stated in the ground of rejection.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Y. Paik whose telephone number is 571-272-4783. The examiner can normally be reached on M-F (8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SANG Y PAIK/

Primary Examiner, Art Unit 3742

Application/Control Number: 10/788,979
Art Unit: 3742

Page 6